## Remarks

The Office Action dated April 07, 2004 has been carefully considered. Claims 1 and 2 have been amended. Claim 5 has been cancelled. Claims 1-4 and 6 are pending in this application.

### 35 USC §112, ¶2 Rejections

Claim 2 and 5 stand rejected under 35 USC § 112 second paragraph. Claim 5 has been cancelled. Claim 2 has been amended to obviate the rejection. Support for amendments in claim 2 may be found throughout the specification and in particular on page 6 of the specification and in Examples 1 and 2. The amendment addresses the rejection by pointing out that the lowered temperature is compared alloy's initial martensitic transformation temperature.

### 35 USC §102(b) Rejections

Claims 1 and 3-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,472,213 to Tabei et al., ("Tabei '213"), U.S. Patent No. 4,554,027 to Tautzenberger et al., US Patent No. 4,750,953 to Tabei ("Tabei '953"), or White et al. Journal de Physique article.

Claim 1 has been amended. Support for the amendment is found on Page 6 of the specification. The invention defined by the present claim 1 now includes a shape memory alloy having a lowered martensitic transformation temperature from the alloy's initial martensitic transformation temperature. The alloy comprises Copper and Zinc in the range of 62-86% of Copper and 10-28% of Zinc along with 6% of Aluminum. The alloy is prepared by a process with a series of steps that result in an alloy with the same chemical composition but a lowered martensitic transformation temperature as a result of the process.

While the cited references may generally disclose an alloy with copper, zinc, and aluminum within the disclosed ranges, none of the references disclose an alloy that has a lowered

martensitic transformation temperature from the alloy's initial martensitic transformation temperature. Additionally, none of the references disclose or suggest subjecting an alloy of Copper and Zinc in the range of 62-86% of Copper and 10-28% of Zinc along with 6% of Aluminum to the steps of the process as now claimed to produce an alloy with a lower martensitic transformation temperature.

For example, Tautzenberger et al. teach that variation in the transformation temperatures between the individual sections can be accomplished by variation in the chemical composition. Tabei '213 teaches that increased deformability of the martensite phase can be attained by additionally incorporating Ti and one of Fe and Ni in the conventional Cu-base shape-memory alloy. Tabai '953 teaches that improved shape-memory properties, in particular, high resistance to intercrystalline cracking and thermal cycling can be achieved by the addition of 0.01-1% Si, and at least one of 0.5-2% Ti, 0.01-1% Cr, 0.01-8% Mn, 0.01-2% Co and 2.1-4% Ni. In contrast, the invention as presently claimed does not result in a change in chemical composition. Therefore none of the references disclose or suggest the invention as presently claimed.

White presents an investigation that grain size dependence on shape memory and reverse shape memory including one example containing a grain refining additive. White does not disclose an alloy with a lowered martensitic transformation temperature and therefore does not anticipate the claims as presently amended.

The remaining pending claims are dependant on Claim 1 and are not anticipated for the reasons discussed above. Additionally, for claim 2 since none of the references disclose lowering an alloy's martensitic transformation temperature from the alloy's initial martensitic transformation temperature, none of the references disclose lowering the temperature by about 80°C. Claim 2 is not anticipated or made obvious over the cited references as they do not teach or even suggest that an alloy's martensitic transformation temperature can be lowered by 80°C using the process in claim 1 or any similar process. Claims 3, 4, and 6 disclose additional features of the alloy in claim 1 prepared by the process and therefore are not anticipated by any of the cited references.

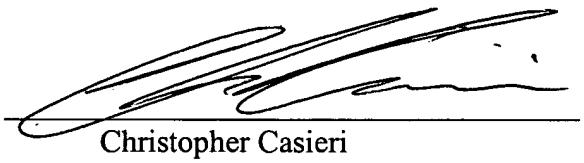
**35 USC §103(a) Rejections**

Claims 1 and 3-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,036,669 to Brook et al., or U.S. Patent No. 4,398,969 to Melton. As the Office Action indicates these references disclose alloys containing copper and zinc in amounts as presently claimed and "at least one alloy in each of Brook and Melton closely approximates this percentage (6%) of aluminum". The references do not teach or suggest an alloy in which the alloy's initial martensitic transformation temperature is lowered. Nor do they teach or suggest a process by which the temperature may be lowered. Therefore the references do not make obvious the claims as presently amended

A prompt action on the merits is earnestly solicited. The Examiner is invited to telephone the undersigned should he believe this would expedite prosecution of this application. The fee for a one month extension is included. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,

Dated: July 9, 2004



Christopher Casieri
Reg. No. 50,919
Attorney for Applicant

MATHEWS, COLLINS, SHEPHERD & McKAY, P.A.
100 Thanet Circle, Suite 306
Princeton, NJ 08540
Tel: 609 924 8555
Fax: 609 924 3036